Appendix D

Instructions for Subjective Map Evaluation

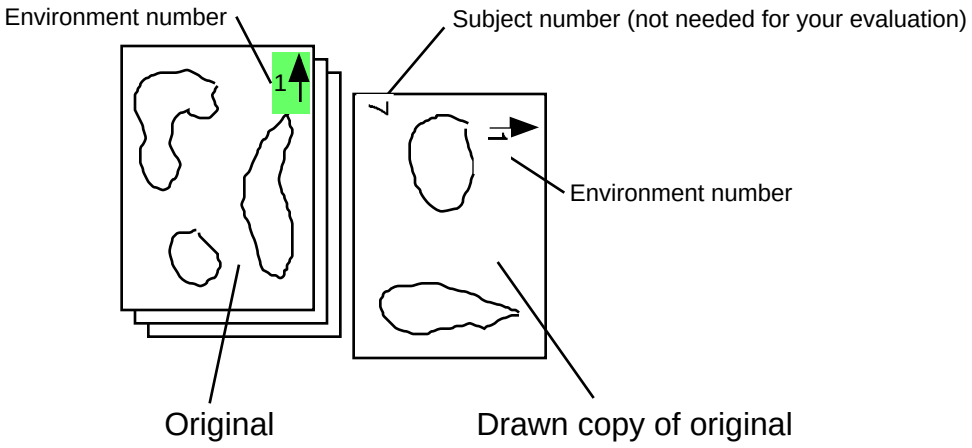
As a bit of background for what you are doing, I recently ran an empirical study as part of my dissertation research at The George Washington University. The study involved way-finding (navigating) in virtual worlds. Each subject was given a navigation task in each of four virtual worlds which were randomly chosen. The task was to locate five targets (ships) and return to the home target. The treatments were as follows:

- Control: no assistance given
- Grid: a radial grid centered at the world's origin is overlaid onto the world
- Map: a map of the world follows the subject throughout the task showing the terrain and the viewpoint but not the targets
- Grid/Map: both the grid and the map are provided

Following each trial, the subject was asked to draw the world in as much detail as possible. Although my primary focus was on the targets, I am also interested in the representation of the land masses as well. I have found no objective way to match a drawn map with the actual environment beyond that of your expert evaluation. What I am asking you to do is rank a number of drawn maps with respect to their original.

You are given five sets of maps showing land masses in open ocean (the targets have been removed). In each set, you will find first a drawing of the actual environment. There is a green highlighted mark on each (See the figure). The arrow points in a specific direction allowing you to properly orient the drawn maps with the original. The number with the arrow (1 in this example) signifies the environment number (1-5). With each original map, you will find a set of drawn maps. Match the arrow direction with that of the original and compare them. In this example, the drawn map would be rotated 90° counterclockwise. We are interested in factors such as

- the number of land masses represented,
- their shapes,
- positions,
- orientations, and
- relative scale to one another.



Overall scale is not important. For each set of maps, rank them in order from the one you find most accurate (designated 1) to those you find most inaccurate (high rank). Number them on the maps. You may designate a tie any way you wish as long as I get the general idea of what order you are specifying. Note that for each environment, the subject may have been exposed to the control treatment (expect a very poor map) or one of the map treatments (expect a better map). However, you are not told the treatment the map was drawn from. But as a consequence of the different treatments, you will find the maps to be vastly varying in quality.